



Southern Regional Wastewater System Ocean Outfall Legislation

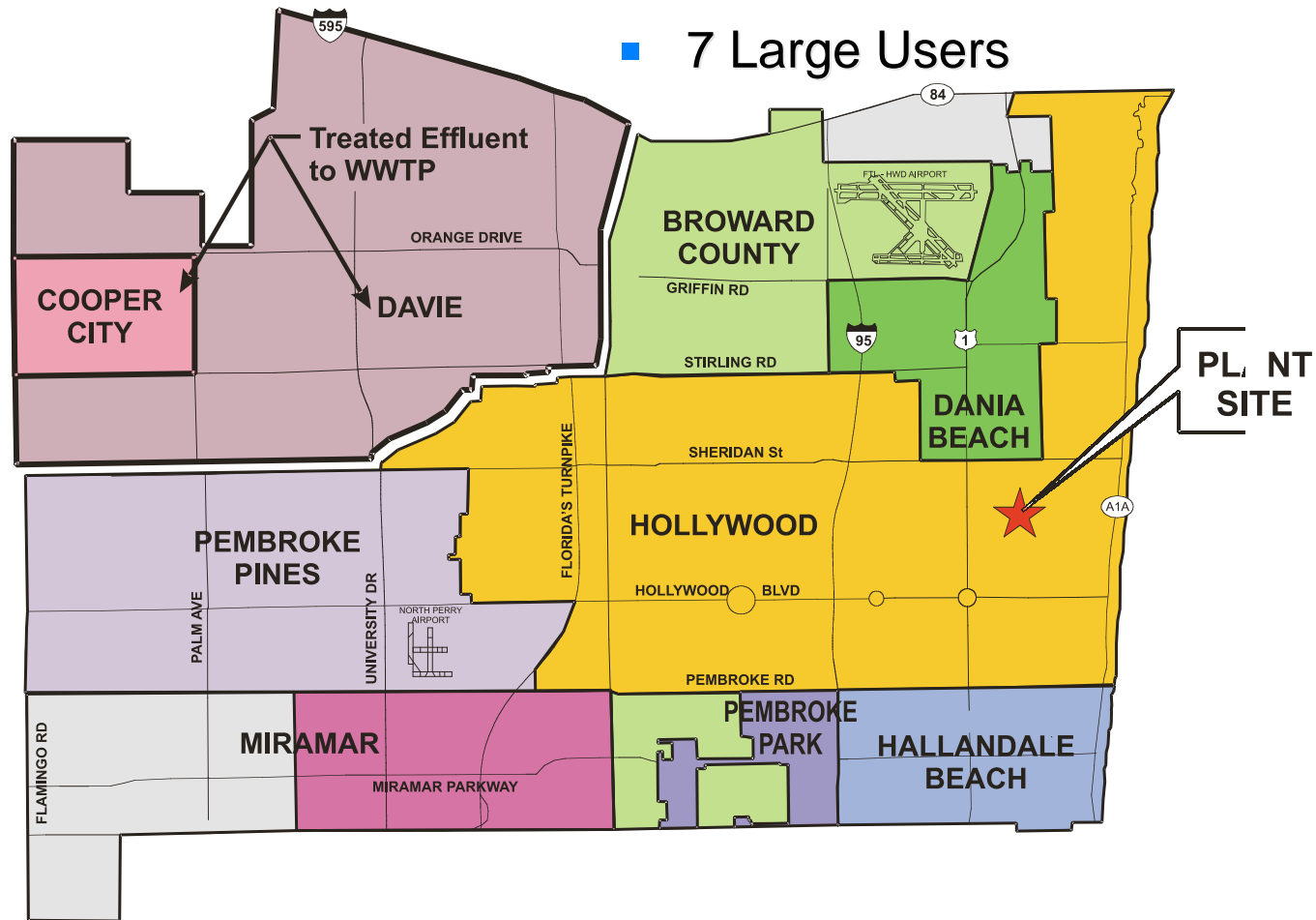
City of Hollywood
Albert L. Perez, P.E.
Director of Public Utilities
February 6, 2009

Outline

- Overview of Southern Regional Wastewater System
- Nutrient Reduction Options
- Reuse Alternatives



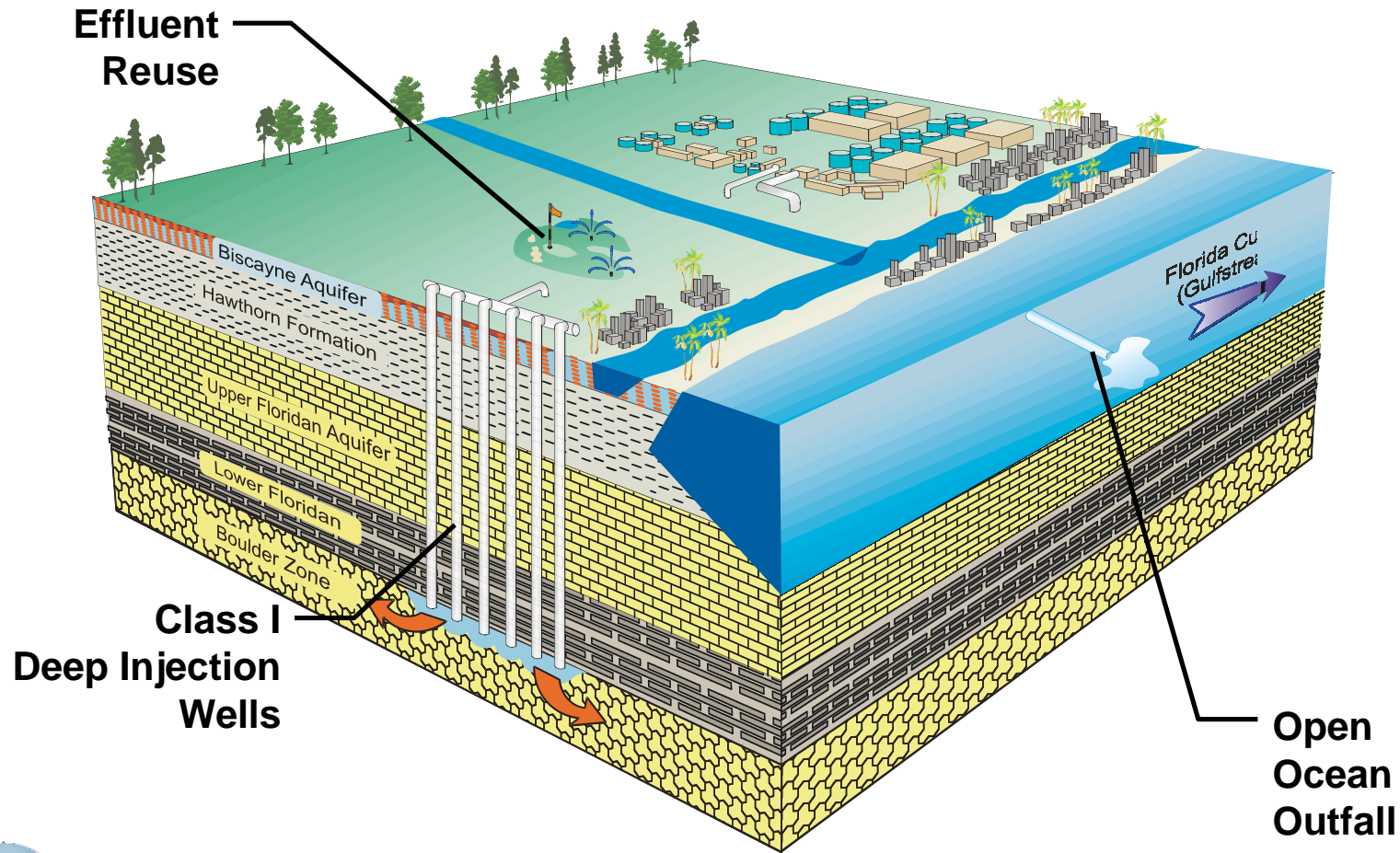
Southern Regional Wastewater Treatment Plant Service Area



4321-016w-fn005



Existing Wastewater Effluent Disposal



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Baseline Establishment

- 2003 -2007 SRWWTP Outfall Data
 - Average Flow – 40.1 mgd
 - Average TN Load – 5,293 lbs/day
 - ▶ Concentration = 15.8 mg/L
 - Average TP Load – 4,247 lbs/day
 - ▶ Concentration = 1.3 mg/L



AWT Compliance Approaches

- Nutrient Reduction Alternative 1 – Implement AWT
 - Maximize use of existing injection wells (≥ 30 mgd to wells)
 - AWT facilities for balance of flow (~30 mgd by 2025)
 - Estimated cost >\$300M



AWT Compliance Approaches

- Nutrient Reduction Alternative 2 – Cumulative reduction
 - Maximize use of existing injection wells (≥ 30 mgd to wells)
 - Possible construction of additional injection well
High Level Disinfection (HLD) required
 - Estimated cost \approx \$45M



AWT Compliance Approaches

- Nutrient Reduction Alternative 3 – 100% Reuse
 - Construct necessary facilities by 2018
- Maximum Reuse Alternative
 - Salinity Barrier
 - Canal Recharge
 - Groundwater Recharge
- Estimated Capital Cost (60 mgd) >\$1.5B

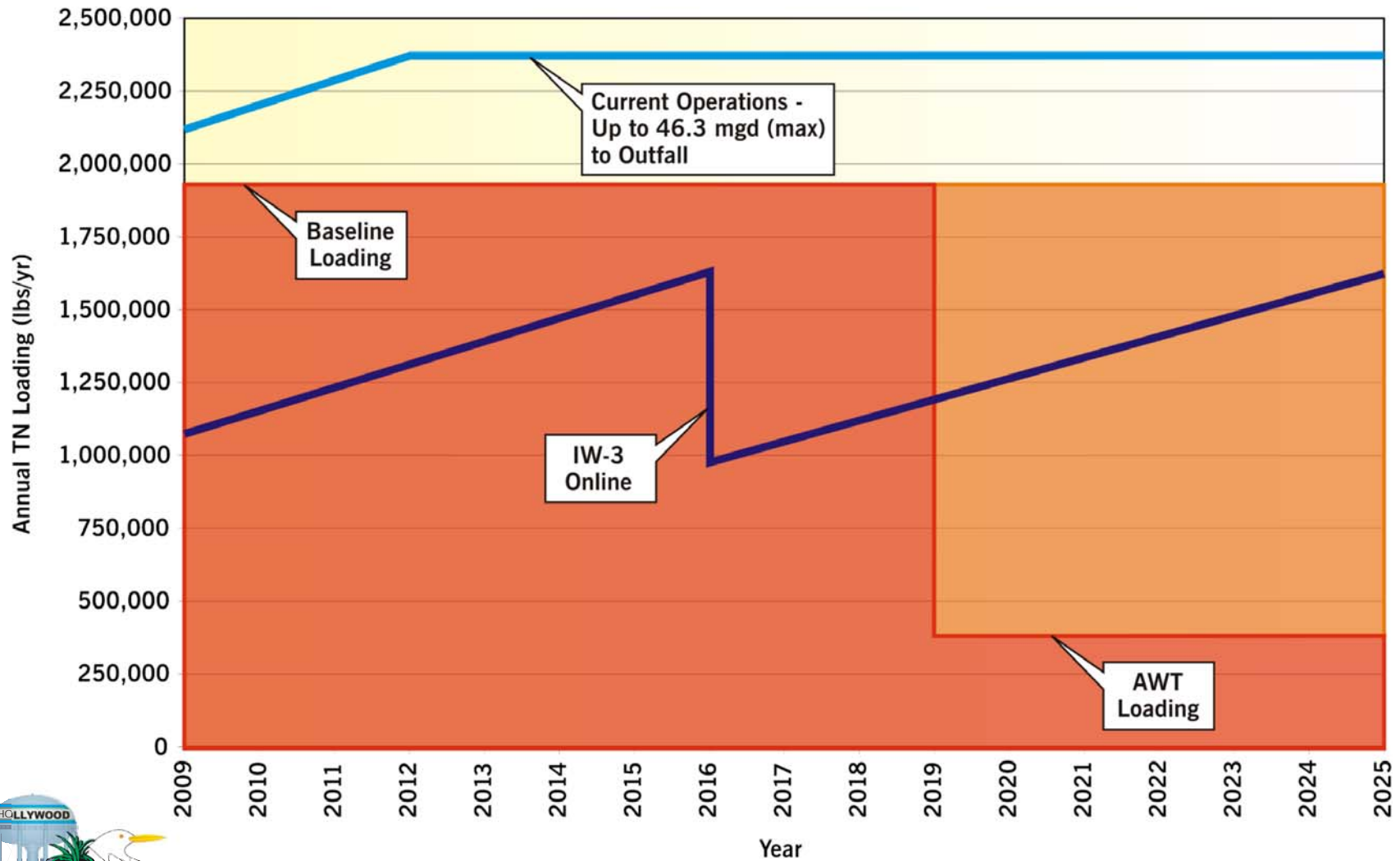


Preferred AWT Compliance Method

- Cumulative Reduction Strategy (Alternative 2)
 - Lowest probable cost option
 - Utilizes existing infrastructure (deep wells)
 - Defers significant treatment plant modifications



Cumulative Reduction Strategies



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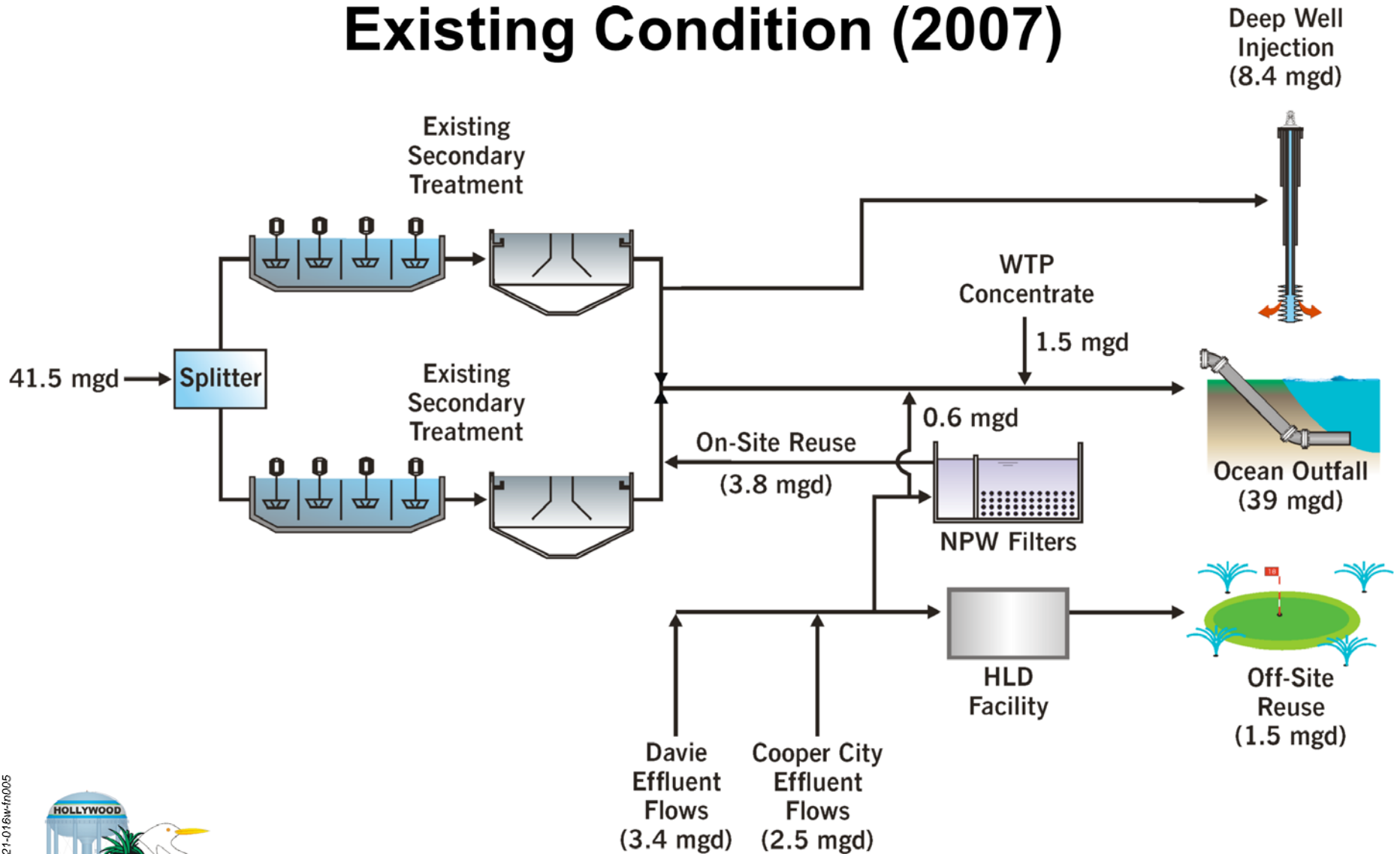


Reuse Compliance Approaches

- Reuse Requirement –
60% of Baseline Outfall Flow by 2025 ~ 25 mgd
- Reuse Alternatives
 - Canal Discharge
 - Biscayne Aquifer Discharge
 - Floridan Aquifer Discharge



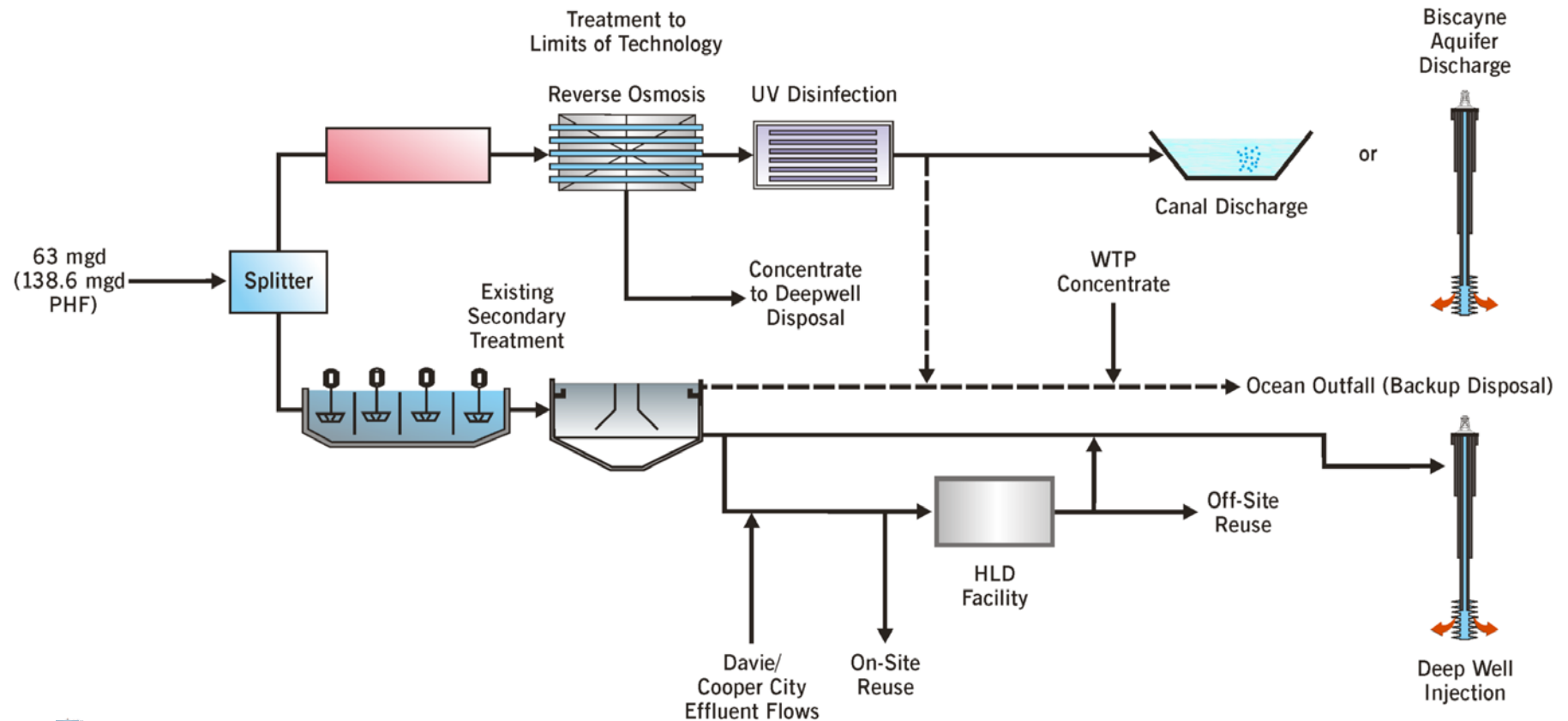
Existing Condition (2007)



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Reuse Alternatives 1 and 2 – Canal / Biscayne Aquifer Discharge



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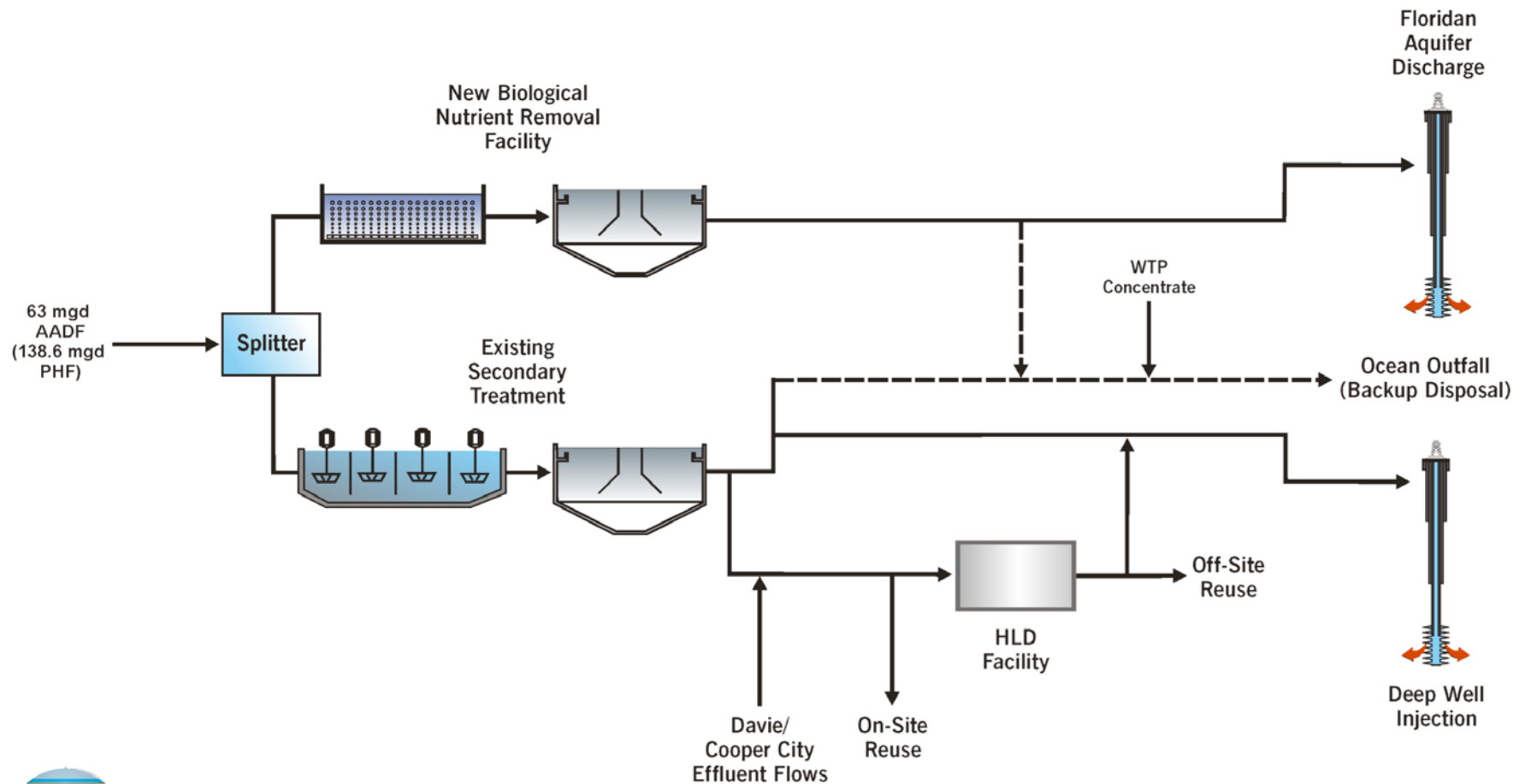


Floridan Aquifer Discharge Regulatory Requirements

	BCEPD	FDEP
CBOD	5 mg/l	20 mg/L
COD	10 mg/L	--
TSS	5 mg/l	5 mg/l
NO ₃ / NO ₂ -N	10 / 1 mg/L	10 / 1 mg/L
NO ₃ + NO ₂ -N	10 mg/L	--
TN	--	10 mg/l
Phosphate	0.01 mg/l	--
Chlorides	250 mg/L	--



Reuse Alternative 3 – Floridan Aquifer Discharge



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Estimated Reuse Alternative Costs

Alternative 1 – Canal Recharge	\$680-830M
Alternative 2 – Biscayne Recharge	\$720-880M
Alternative 3 – Floridan Recharge	\$400-510M



Plan of Action

- Meet nutrient reduction requirements
 - Cumulative reduction option
- Conduct pilot testing and modeling studies
 - Determine design criteria, optimization of process
 - Injection modeling, flow rates, pressures, well spacing, etc.
 - Determine degree of recharge, sites, etc.
- Evaluate options and work with stakeholders in the selection of best alternative.



Questions

